



ILLINOIS

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

PRODUCTION NOTE

University of Illinois at
Urbana-Champaign Library
Large-scale Digitization Project, 2007.

LIBRARY TRENDS

FALL 2000

VOLUME 49, NUMBER 2, 221-390

Assessing Digital Library Services

Thomas A. Peters

Issue Editor

UNIVERSITY OF ILLINOIS
GRADUATE SCHOOL OF
LIBRARY AND INFORMATION SCIENCE

LIBRARY TRENDS

Library Trends, a quarterly thematic journal, focuses on current trends in all areas of library practice. Each issue addresses a single theme in depth, exploring topics of interest primarily to practicing librarians and information scientists and secondarily to educators and students.

Editor: F. W. LANCASTER

Managing Editor: JAMES S. DOWLING

Publications Committee: LEIGH ESTABROOK, MARLO WELSHONS, BETSY HEARNE, ROBERT MCCHESENEY

Library Trends is published four times annually—in summer, fall, winter, and spring—by the Graduate School of Library and Information Science at the University of Illinois, Urbana-Champaign, 501 E. Daniel Street, Champaign, IL 61820-6211.

Subscriptions: Institutional rate is \$85 per volume (plus \$7 for overseas subscribers). Subscriptions for an individual are \$60 (plus \$7 for overseas subscribers). Registered students may subscribe for \$25 (plus \$7 for overseas subscribers). Individual issues are \$18.50 (shipping included); back issues other than those from the present year are \$10 (plus shipping). Claims for missing numbers should be made within six months following the date of publication. All foreign subscriptions and orders must be accompanied by payment.

Address orders to: University of Illinois Press, Journals Department, 1325 S. Oak Street, Champaign, IL 61820. For out-of-print issues, contact Bell & Howell Information and Learning, 300 North Zeeb Road, Ann Arbor, MI 48106-1346. **Postmaster:** Send change of address to University of Illinois Press, 1325 S. Oak Street, Champaign, IL 61820-6903.

Copyright © 2001 by the Board of Trustees of The University of Illinois.

All rights reserved. Printed in the U.S.A. ISSN 0024-2594.

Postage paid at Champaign, Illinois.

Authorization to photocopy items beyond the number and frequency permitted by Sections 107 and 108 of the U.S. Copyright Law is granted by the Board of Trustees of the University of Illinois, provided that copies are for internal or personal use, or for the personal or internal use of specific clients and provided that the copier pay a fee of 10 cents per page directly to the Copyright Clearance Center (CCC), 222 Rosewood Dr., Danvers, MA 01923. The CCC code for *Library Trends* is 0024-2594/88 \$0 + .10. To request permission for copies for advertising or promotional purposes, or for creating new works, please contact the Graduate School of Library and Information Science, Publications Office, 501 E. Daniel Street, Champaign, IL 61820-6211.

This journal is abstracted or indexed in *Library and Information Science Abstracts*, *Current Contents*, *Current Index to Journals in Education*, *Information Science Abstracts*, *Library Literature*, *PAIS*, and *Social Sciences Citation Index*.

Procedures for Proposing and Guest Editing an Issue of *Library Trends*

We encourage our readers to submit ideas for future *Library Trends* themes; issue topics are developed through recommendations from members of the Publications Committee and from reader suggestions. We also encourage readers to volunteer to be issue editors or to suggest others who may be willing to be issue editors.

The style and tone of the journal is formal rather than journalistic or popular. *Library Trends* reviews the literature, summarizes current practice and thinking, and evaluates new directions in library practice. Papers must represent original work. Extensive updates of previously published papers are acceptable, but revisions or adaptations of published work are not sought.

An issue editor proposes the theme and scope of a new issue, draws up a list of prospective authors and article topics, and provides short annotations of the article's scope or else gives a statement of philosophy guiding the issue's development. Please send your ideas or inquiries to F. W. Lancaster, Editor, Publications Office, 501 E. Daniel Street, Champaign, IL 61820-6211.

LIBRARY TRENDS

Fall 2000

49(2) 221-390

Assessing Digital Library Services

Thomas A. Peters

Issue Editor

STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION

(1) Publication Title: *Library Trends*. (2) Publication Number: 0024-2594. (3) Filing Date: October 2000. (4) Issue Frequency: Quarterly (Summer, Fall, Winter, Spring). (5) Number of Issues Published Annually: Four. (6) Annual Subscription Price: \$85. (7) Complete Mailing Address of Known Office of Publication (Not printer) (Street, city, county, state, and ZIP+4): University of Illinois, Graduate School of Library and Information Science, Publications Office, 501 East Daniel Street, Champaign, Illinois 61820-6211, Champaign County; Contact Person: Marlo Welshons; Telephone: (217) 333-1359. (8) Complete Mailing Address of Headquarters or General Business Office of Publisher (Not printer): University of Illinois, Graduate School of Library and Information Science, Publications Office, 501 East Daniel Street, Champaign, Illinois 61820-6211. (9) Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Do not leave blank): Publisher—University of Illinois, Graduate School of Library and Information Science, Publications Office, 501 East Daniel Street, Champaign, Illinois 61820-6211; Editor—F. Wilfrid Lancaster, University of Illinois, Graduate School of Library and Information Science, 501 East Daniel Street, Champaign, Illinois 61820-6211; Managing Editor—James S. Dowling, University of Illinois, Graduate School of Library and Information Science, 501 East Daniel Street, Champaign, Illinois 61820-6211. (10) Owner: The Board of Trustees, University of Illinois, Urbana, Illinois 61801. (11) Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities: None. (12) Tax Status: Has Not Changed During Preceding 12 Months. (13) Publication Title: *Library Trends*. (14) Issue Date for Circulation Data: 8/30/2000.

| (15) Extent and Nature of Circulation | Average No. Copies Each Issue During Preceding 12 Months | No. Copies of Single Issue Published Nearest to Filing Date |
|--|--|---|
| a. Total Number of Copies (Net Press Run) | 2550 | 2564 |
| b. Paid and/or Requested Circulation | | |
| (1) Paid Requested Outside-County Mail Subscriptions Stated on Form 3541. | 2131 | 2213 |
| (2) Paid in-County Subscriptions. | 0 | 0 |
| (3) Sales through Dealers and Carriers, Street Vendors, Counter Sales, and Other Non-USPS Paid Distribution. | 0 | 0 |
| (4) Other Classes Mailed Through the USPS. | 0 | 0 |
| c. Total Paid and/or Requested Circulation | 2131 | 2213 |
| d. Free Distribution by Mail | | |
| (1) Outside-County as Stated on Form 3541 | 4 | 5 |
| (2) In-County as Stated on Form 3541 | 0 | 0 |
| (3) Other Classes Mailed Through the USPS | 0 | 0 |
| e. Free Distribution Outside the Mail | 8 | 8 |
| f. Total Free Distribution | 12 | 13 |
| g. Total Distribution | 2143 | 2226 |
| h. Copies not Distributed | 407 | 338 |
| i. Total | 2550 | 2564 |
| j. Percent Paid and/or Requested Circulation | 99.44 | 99.42 |

(16) Publication of Statement of Ownership. Publication Required. Will be printed in the Volume 49, Number 2, Fall 2000 issue of this publication.

Assessing Digital Library Services

CONTENTS

| | |
|---|-----|
| Introduction <i>Thomas A. Peters</i> | 221 |
| Evaluating Digital Libraries for Teaching and Learning in Undergraduate Education: A Case Study of the Alexandria Digital Earth Prototype (ADEPT) <i>Christine L. Borgman, Anne J. Gilliland-Swetland, Gregory H. Leazer, Richard Mayer, David Gwynn, Rich Gazan, and Patricia Mautone</i> | 228 |
| Unobtrusive Data Analysis of Digital Reference Questions and Service at the Internet Public Library: An Exploratory Study <i>David S. Carter and Joseph Janes</i> | 251 |
| Bundles in the Wild: Managing Information to Solve Problems and Maintain Situation Awareness <i>Paul Gorman, Joan Ash, Mary Lavelle, Jason Lyman, Lois Delcambre, David Maier, Mathew Weaver, and Shawn Bowers</i> | 266 |
| Digital Libraries and Their Challenges <i>Daniel Greenstein</i> | 290 |
| Evaluating Digital Libraries: A Longitudinal and Multifaceted View <i>Gary Marchionini</i> | 304 |

| | |
|--|-----|
| Current Opportunities for the Effective Meta-Assessment of Online Reference Services <i>Thomas A. Peters</i> | 334 |
| Digital Library Evaluation: Toward Evolution of Concepts <i>Tefko Saracevic</i> | 350 |
| Project Ethnography: An Anthropological Approach <i>Michael Seadle</i> | 370 |
| About the Contributors | 386 |